



U.S. Department of Energy  
Energy Efficiency and Renewable Energy

industrial technologies program

# Industrial Energy Efficiency: *The Strategic Solution*

Industrial Technologies  
Office of Energy Efficiency and Renewable Energy  
U.S. Department of Energy



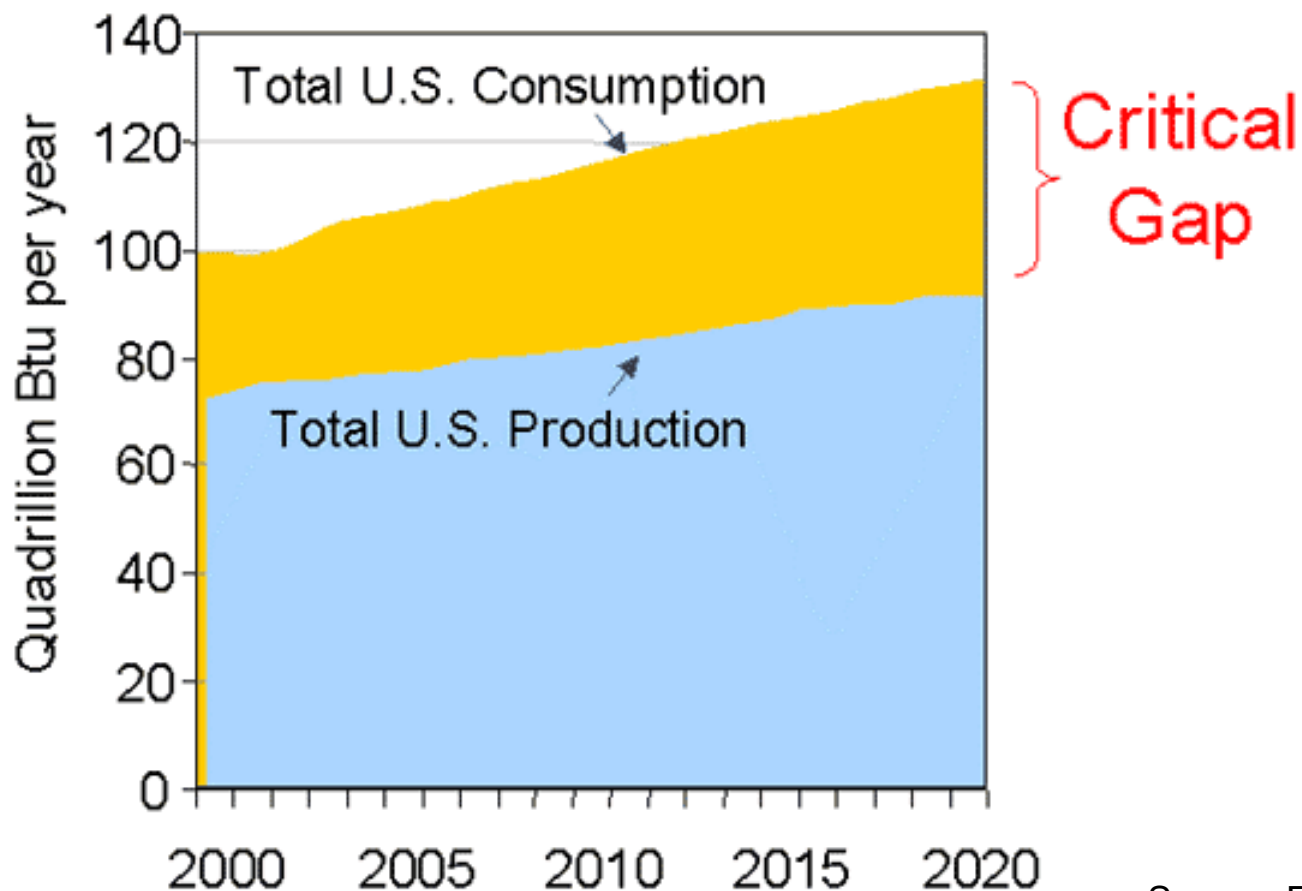
# Newly Expanded Portfolio of Resources





# Projected Energy Use

## Total U.S. Energy Production vs. Consumption, 2000-2020

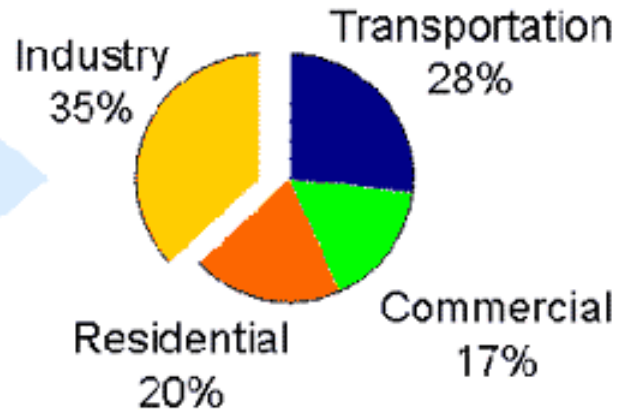




# Why Work with Industry?

Industry is the largest single energy-consuming sector in the Nation.

## 2001 Energy Use



## Energy Savings Benefits

- Lower production costs
- Environmental compliance
- Reduced waste
- Increased productivity
- Improved competitiveness
- Economic Strength
- Environmental Quality
- National Security



# Delivering Technology Solutions



## Partnerships

## Collaborative R&D



- Energy-intensive industries (IOF)
- Crosscutting Technologies
- Grand Challenges

## Technology Delivery



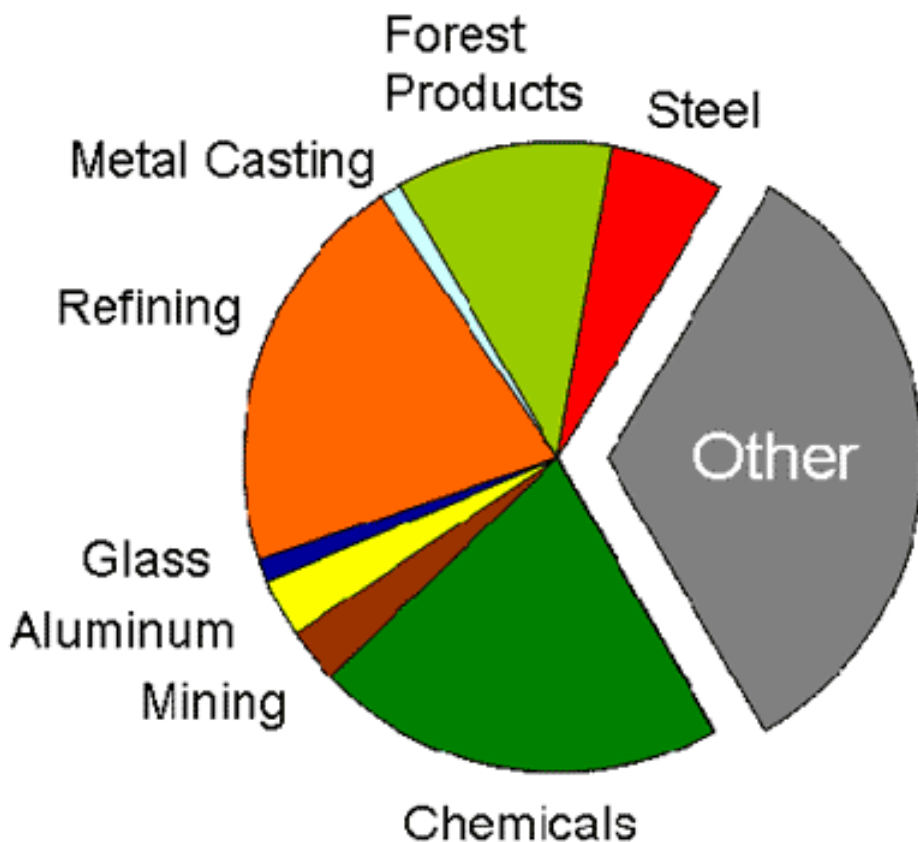
- Assessments
- Training & Tools
- Technology Demonstrations



# Industries of the Future

*Focus on energy-intensive industries...*

**Industrial Energy Use: 35 Quads**



*...and cross-cutting industries:*

- Sensors & Automation
- Advanced Materials
- Combustion
- Industrial Energy Systems



# Grand Challenges Tackle Big Issues

*Through an open, competitive solicitation process, OIT will award cost-shared funding to selected projects that*

- Address an important defined technical goal
- Focus on issues that are technically complex and lack previous solutions
- Involve high-risk, high-return R&D
- Require public-private partnerships
- Integrate smaller projects
- Promise large energy and environmental benefits





# Technology Delivery

- **Software Tools & Training**

Training in practices and software to improve the energy performance of plant systems

- **Industrial Assessment Centers**

No-cost assessments provided to eligible **small & mid-size plants** by university-based teams

- **Plant-wide Assessments**

Up to \$100K in EERE funds competitively awarded to **large plants** through an open solicitation process. Cost-shared funding pays for third-party analysis.

- **Technology Demonstrations**

OIT solicits proposals to install and field-test emerging technologies.

- **Replication**

OIT works with plants and industry associations to replicate energy savings.







# Tools Available on Our Web Site or via Links

- **Motor Master +** Assists in energy-efficient motor selection and management.
- **Pumping System Assessment Tool** Helps assess the efficiency of pumping system operations.
- **Steam System Scoping Tool** Profiles and grades large steam system operations and management to find opportunities.
- **Steam System Assessment Tool** Assesses potential benefits of specific steam system improvements.
- **Air Master+** Provides comprehensive information on assessing compressed air systems.
- **3EPlus Insulation Assessment Tool** Calculates most economical insulation thickness under various operating conditions.
- **ASDMaster** Helps determine the economic feasibility of adjustable speed drive applications.
- **Process Heating Assessment and Survey Tool** Models energy use and ways to improve performance.



# Industrial Assessment Centers (IACs)



Teams of engineering faculty and students from 26 university-based IACs around the country conduct no-cost, on-site industrial assessments at eligible facilities.

- ~240 students in training each year
- Average savings per assessment in FY 2001: \$72,426

## **Cumulative Program Benefits: 1977-2001**

- Nearly \$2 billion in energy savings
- \$1.1 billion in waste and productivity savings
- 467 trillion Btus saved



# Plant-wide Assessments (PWAs)

## Annual Savings Opportunities Identified

Anchor Glass Container	\$1,638,000.	Georgia Pacific	\$5,000,000.
Akzo Nobel	\$1,170,000.	Inland	\$9,500,000.
Alcoa	\$1,072,000.	MetLab	\$518,000.
AMCAST	\$3,600,000.	Neville Chemical	\$75,000.
Appleton Paper	\$3,459,000.	Rohm & Haas	\$1,090,000.
Bayer	\$1,478,000.	Utica Corporation	\$1,880,000.
Boise Cascade	\$707,000.	Weyerhaeuser	\$3,100,000.
Caraustar	\$1,280,000.	WR Grace	\$840,000.
Corning	\$25,920,000.	3M	\$1,094,000.
Ford	\$3,280,000.		



# Technology Demonstrations

- OIT solicits proposals from industrial companies interested in demonstrating an emerging technology that promotes energy efficiency.
- Requires matching private cost-share in cash or in kind
- Time frame: up to 3 years

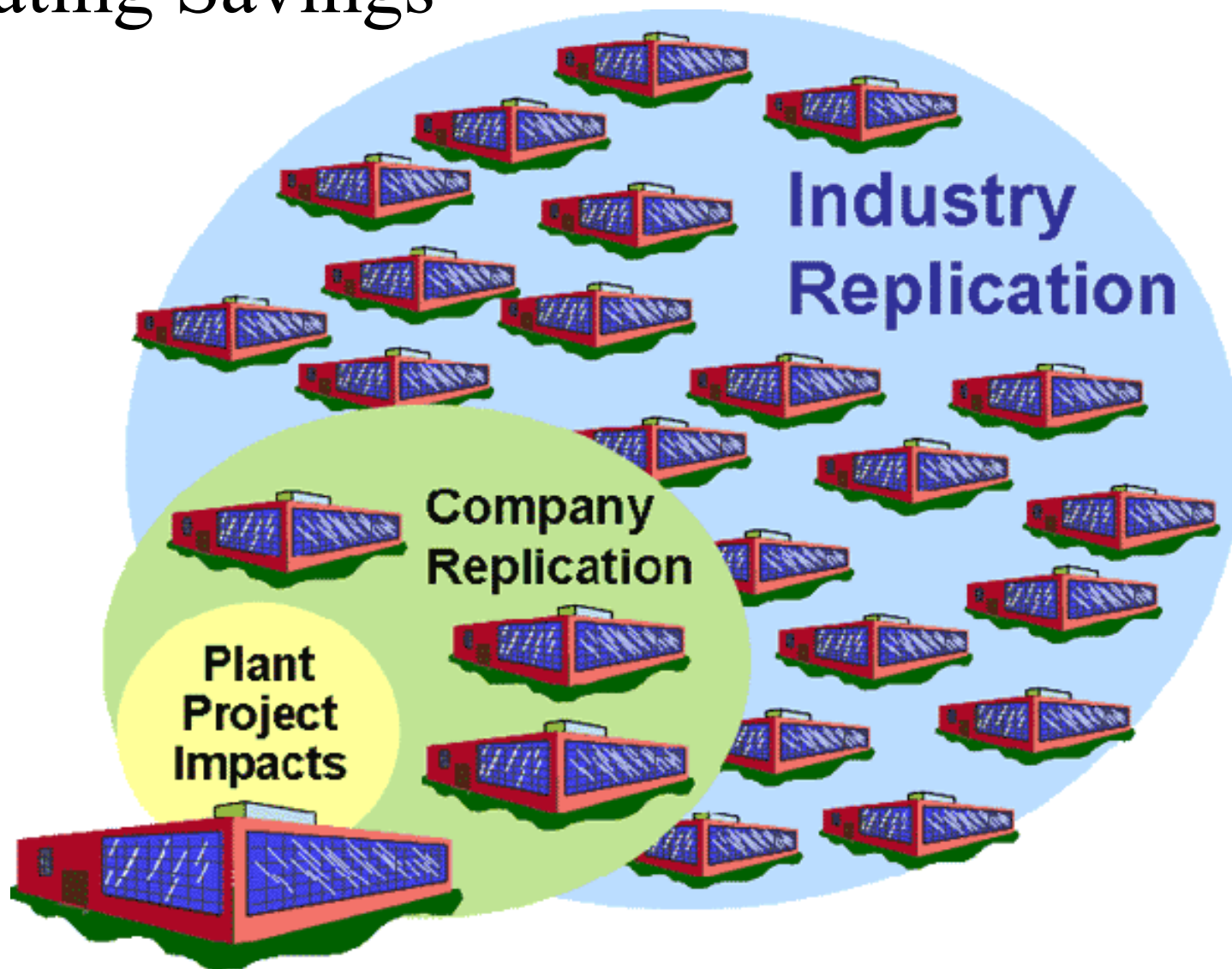


## **Results**

- **Mitigate risks** associated with first use of technologies
- Provide **verified performance data** to ease hurdle of new technology acceptance
- Document **realized savings**



# Replicating Savings





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# Gateways to EERE Technologies

Energy Efficiency & Renewable Energy

**EERE Allied Partnerships**

**State Partnerships**

**EERE Showcases**







# EERE Allied Partners:

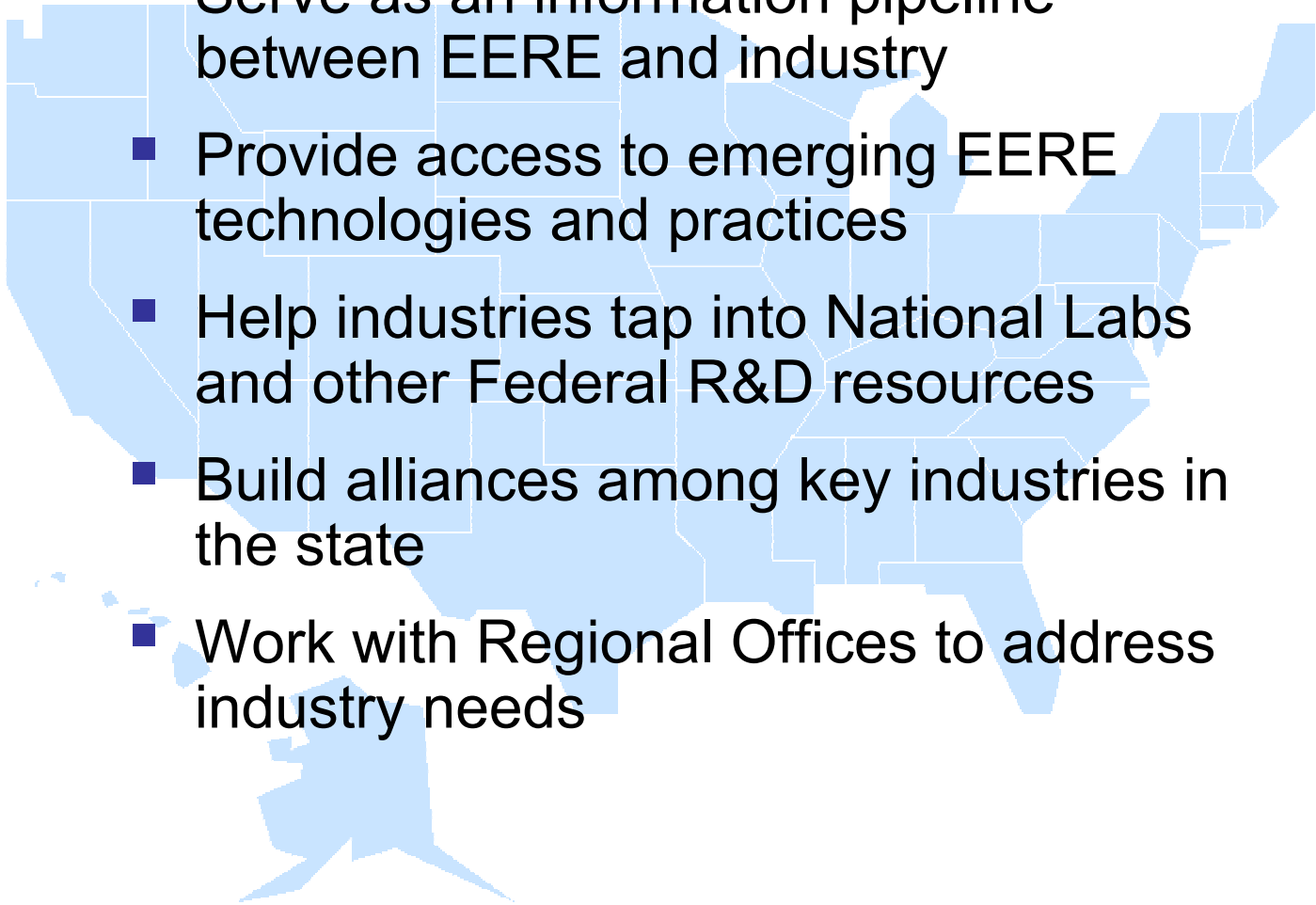
- Enrich existing services to industrial plants by delivering EERE tools, training, information, technologies, and other opportunities for energy savings.
- Expand industry's access to EERE products and services.
- Work with EERE to develop case studies, training seminars, software tools, conference sessions, etc.







# State Partnerships

- 
- A light blue map of the United States, including the contiguous 48 states, Alaska, and Hawaii, serves as a background for the list. The map is centered behind the text.
- Serve as an information pipeline between EERE and industry
  - Provide access to emerging EERE technologies and practices
  - Help industries tap into National Labs and other Federal R&D resources
  - Build alliances among key industries in the state
  - Work with Regional Offices to address industry needs



# EERE Showcases

Public events to highlight the benefits of energy efficiency and renewable energy technologies and practices. Goal: Replicate savings.

## Host Benefits

- Access to emerging technology, tools, and assistance
- Energy and productivity savings
- Community recognition



*Elements may include:*

- Plant tours featuring ***advanced technology demonstrations*** under real-use conditions
- Results of ***plant-wide energy and productivity assessments***
- ***Presentations*** on emerging technologies and best practices



# How to Access the Program

## Regional Offices

### Atlanta

David Godfrey  
404-562-0568

### Chicago

Brian Olsen  
312-886-8579

### Seattle

Chris Cockrill  
816-873-3299

### Boston

Scott Hutchins  
617-565-9765

### Denver

Jack Jenkins  
303-275-4824  
Sandy Glatt  
303 275-4857

### Philadelphia

Joe Barrett  
215-656-6957

**Visit our Web site:**  
**[www.oit.doe.gov](http://www.oit.doe.gov)**

**EERE Clearinghouse**  
**800-DOE-3732**



# Resources & Information

## Clearinghouse

On-call team of 17 professional engineers, scientists, research librarians, energy specialists, and communications information staff



- Fact Sheets
- Newsletters
- Tip Sheets
- Brochures
- Reports
- Software  
Decision Tools
- Data

Voice: **1-800-862-2086**

Fax: **360-586-8303**

Email: **[clearinghouse@ee.doe.gov](mailto:clearinghouse@ee.doe.gov)**

Web: **[www.oit.doe.gov](http://www.oit.doe.gov)**



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